We claim:

1. A method for detecting of the change of a physically measurable property of a sample due to an environmental effect, in which
(i) the sample is subjected to the environmental effect for an action time Δt, the environmental effect being made to act on the sample with a known position-dependent intensity distribution I(x, y) (intensity pattern), which is based on a pattern function M(x, y),
(ii) the transmission, reflection or scattering of analysis radiation by the sample is subsequently detected as a function of the position coordinates (x, y) of the sample and the wavelength λ of the analysis radiation, so as to determine a response function A(x, y, λ) which describes the intensity of the transmitted, reflected or scattered analysis radiation as a function of the position coordinates (x, y) of the sample and the wavelength λ,
(iii) the correlation of the known position-dependent intensity distribution I(x, y) of the environmental effect, or of the pattern function M(x, y) on which this is based, with the response function A(x, y, λ) is determined by correlation analysis, this correlation being a measure of the change of the physically measurable property of the sample due to the environmental effect.

2. The method as claimed in claim 1, wherein the environmental effect is made to act on the substrate surface through a mask, which has a specific position-dependent transmission function T(x, y), so as to produce the position-dependent intensity distribution I(x, y) as an image of the mask on the substrate surface.

3. The method as claimed in claim 1 or 2, wherein the environmental effect consists of the action of radiation, and the intensity distribution is a position- and wavelength-dependent intensity distribution I(x, y, λ_u).

4. The method as claimed in one of claims 1 to 3, wherein the environmental effect comprises the action of light.

5. The method as claimed in claim 1 or 2, wherein the environmental effect comprises the action of the mechanical forces.

6. The method as claimed in claim 1 or 2, wherein the environmental effect comprises the action of chemicals.

7. The method as claimed in claim 1 or 2, wherein the environmental effect comprises the action of gases.

8. The method as claimed in claim 1 or 2, wherein the environmental effect comprises the action of microorganisms.

9. The method as claimed in claim 1 or 2, wherein the environmental effect comprises the action of radioactive radiation.

10. The method as claimed in claim 1 or 2, wherein the environmental effect comprises the action of sound waves.

11. The method as claimed in claim 1 or 2, wherein the environmental effect comprises the action of heat.

12. The method as claimed in one or more of claims 1 to 11, wherein the environmental effect is caused by weathering of the sample.

13. The method as claimed in claim 1 or 2, wherein the environmental effect is caused by the application of chemicals to the sample.

14. The method as claimed in claim 3 or 4, wherein the intensity distribution $I(x, y, \lambda_u)$ is produced as a reference pattern on the sample.

15. The method as claimed in claim 3 or 4, wherein the intensity distribution $I(x, y, \lambda_u)$ is produced by exposing the sample to light through the mask, which has a position- and wavelength-dependent transmission function $T(x, y, \lambda)$.

16. The method as claimed in claim 15, wherein exposure is carried out with artificial or natural sunlight.

17. The method as claimed in claim 15 or 16, wherein the mask is a barcode mask.

18. The method as claimed in one of claims 1 to 17, wherein the intensity distribution $I(x, y)$ or $I(x, y, \lambda_u)$ is a periodic intensity distribution with a spatial frequency α.

19. The method as claimed in claim 18, wherein the correlation analysis is a Fourier analysis.

20. The method as claimed in one of claims 1 to 19, wherein the transmission, reflection or scattering of analysis light in the UV-VIS and/or NIR ranges is determined.

21. The method as claimed in one of claims 1 to 20, wherein the transmission, reflection or scattering of analysis radiation by the sample is determined for a plurality of wavelength ranges $\Delta\lambda$, so as to determine a plurality of response functions $A(x, y, \Delta\lambda)$ for a plurality of wavelength ranges $\Delta\lambda$.

22. The method as claimed in claim 21, wherein a response function is respectively determined for red, green and blue light by RGB analysis.

23. The method as claimed in one of claims 1 to 22, wherein the reflection of the analysis light is detected.

24. The method as claimed in claim 23, wherein telecentric measurement optics are used for the detection.

25. The method as claimed in one of claims 1 to 22, wherein the scattering of the analysis light is detected.

26. The method as claimed in claim 25, wherein a confocal color measurement system is used for the detection.

27. The method as claimed in one of claims 1 to 22, wherein the reflection or scattering of the analysis light by the sample as a function of the position coordinates (x, y) is detected using a color scanner.

28. The method as claimed in one of claims 1 to 22, wherein the reflection or scattering of the analysis light by the sample as a function of the position coordinates (x, y) is detected using a digital camera.

29. The method as claimed in one of claims 1 to 28, wherein the response function $A(x, y, \lambda)$ is determined using a digital image processing electronics.

30. Use of the method as claimed in claim 23 or 24 for determining the change of the luster of a substrate surface.

31. The use as claimed in claim 30, wherein the substrate surface is a paint surface.

32. The use as claimed in claim 31, wherein the paint is an automobile paint.

33. Use of the method as claimed in claim 25 or 26 for determining the light fastness of colorants, or of substrates colored using them.

34. Use of the method as claimed in one of claims 1 to 29 for studying the photoinduced or photo-oxidative aging of substances.

35. The use as claimed in claim 34, wherein the substances are selected from the plastics, optionally colored using colorants, paints, textiles, metals, paper, wooden articles, construction materials and cosmetic formulations.

36. Use of the method as claimed in one of claims 1 to 29 for studying the weatherproofness of substances.

37. Use of the method as claimed in one of claims 1 to 29 for studying the chemical stability of substances.

38. Use of the method as claimed in one of claims 1 to 29 for studying the abrasion resistance of coatings on a substrate.